

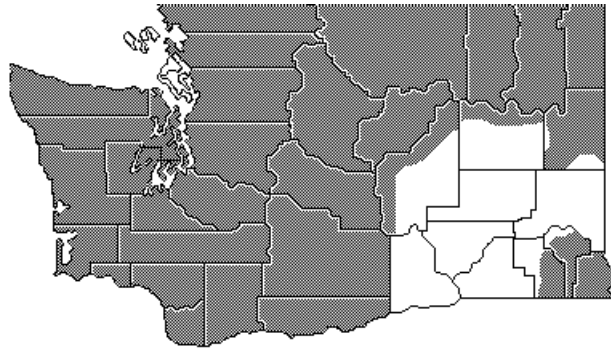
Vaux's Swift
Chaetura vauxi

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GENERAL RANGE AND WASHINGTON DISTRIBUTION

Vaux's swifts breed from southeastern Alaska, northwestern and southern British Columbia, western Montana, and northern Idaho south to central California and west to the Pacific Coast. They winter from northern Mexico south to Central America and Venezuela (Bull and Collins 1993, DeGraaf and Rappole 1995, Sibley 2000).

Vaux's swifts are summer residents throughout wooded areas of Washington (Hoffman 1927, Jewett et al. 1953, Manuwal and Huff 1987, Lundquist and Mariani 1991). They usually arrive in Washington around early May and remain until September (Hoffman 1927). Breeding populations may occur in forested habitats throughout the state (Kitchin 1949, Jewett et al. 1953, Thomas et al. 1979, Brown 1985).



Range of the Vaux's swift, *Chaetura vauxi*, in Washington. Map derived from Washington Department of Fish and Wildlife data files and GAP Analysis of Washington.

RATIONALE

The Vaux's swift is a State Candidate species associated with old-growth and mature forests in the Cascade Range (Manuwal and Huff 1987, Lundquist and Mariani 1991), Olympic Peninsula (Kitchin 1949), and Blue Mountains (Jewett et al. 1953). Throughout their breeding range they are highly dependent on large hollow trees and snags for nesting and roosting (Baldwin and Zaczkowski 1963, Bull 1991, Bull and Cooper 1991). Loss of old-growth and mature forested habitat in Washington (Harris 1984, Thomas et al. 1990) threaten Vaux's swift populations (Bull 1991, Bull and Hohmann 1993).

HABITAT REQUIREMENTS

Vaux's swifts are strongly associated with old-growth forests (Manuwal and Huff 1987, Gilbert and Allwine 1991, Huff and Raley 1991, Lundquist and Mariani 1991, Manuwal 1991, Bull and Hohmann 1993), nesting primarily in old-growth coniferous forests (Baldwin and Zaczkowski 1963, Bull and Cooper 1991, Bull and Hohmann 1993). However, the characteristics of the stand as a whole (i.e., age, canopy layering, stem density) may not be as critical as the availability of suitable nesting or roosting structures (Bull and Hohmann 1993). The availability of suitable nesting or roosting structures is suspected to be the limiting factor for this species (Bull and Hohmann 1993). They require hollow chambers in large snags or live trees with broken tops for nesting and night roosting. The height where swifts nest in hollow trees or snags may vary, ranging from near base level (Baldwin and Zaczkowski 1963) to an average of 12 m (39 ft) (Bull and Cooper 1991). Bull and Cooper (1991) found that nest trees averaged 25 m (82 ft) in height and 68 cm (27 in) in diameter at breast height (dbh). Many Vaux's swifts nest in hollow trees used by roosting pileated woodpeckers (*Dryocopus pileatus*). Swifts enter these trees through holes excavated by pileated woodpeckers. Without the aid of pileated woodpecker excavation, swifts would have no access to many hollow tree chambers (Bull and Collins 1993). Sterling and Paton (1996) suggested that Vaux's swifts may rely on pileated woodpeckers to create nesting habitat, potentially explaining the similar ranges of these two species in California.

Vaux's swifts have been frequently observed nesting or roosting in chimneys (Jewett et al. 1953, Huey 1960, Griffiee 1961, Baldwin and Hunter 1963, Thompson 1977, Sterling and Paton 1996). Historical documentation indicates they prefer older construction, brick chimneys (Huey 1960, Baldwin and Hunter 1963, Baldwin and Zaczkowski 1963, Bull and Collins 1993). Vaux's swifts have been reported using chimneys at least 6.2 m (20 ft) in height, with openings ranging from 23 cm x 23 cm (9 in x 9 in) to 36 cm x 41 cm (14 in x 16 in), securing their nests in the chimney corners (Griffiee 1961, Baldwin and Hunter 1963, Thompson 1977). Griffiee (1961) observed up to 5 nesting pairs per chimney; however, 1 nest per chimney or tree is typical (Baldwin and Zaczkowski 1963, Thompson 1977, Bull and Collins 1993). Although chimneys are used by this species, hollow trees are favored by nesting and roosting swifts making them more vulnerable to the loss of old-growth forests as opposed to the loss of suitable artificial structures (Bull and Collins 1993).

Vaux's swifts feed exclusively while flying. Their diet consists primarily of flying insects and they forage mainly within a 0.40 km (0.25 mi) radius of the nest site when feeding their young (Bull and Beckwith 1993). Forests at various stages of development, grasslands and aquatic habitats are all used for foraging (Bull and Beckwith 1993).

LIMITING FACTORS

This strong connection of this species with old-growth forests suggests that availability of this type of forested habitat and its associated features (e.g., large, hollow snags and live trees) limit the swift's distribution and abundance during breeding season.

MANAGEMENT RECOMMENDATIONS

Vaux's swifts are found at their highest densities in old-growth forested habitat (Carey 1989, Carey et al. 1991, Gilbert and Allwine 1991, Huff and Raley 1991, Lundquist and Mariani 1991, Manuwal 1991, Bull and Hohmann 1993). The higher abundance of large, hollow snags and live trees appear to explain the greater density of swifts in old-growth versus younger forested stands (Bull and Collins 1993). Protection of existing old-growth should benefit Vaux's swifts, along with managing forest stands on long rotations (>200 years) and maintaining large hollow snags and live trees (Cline et al. 1980, Bull and Collins 1993, Bull and Blumton 1997). Large snags and live trees intended for future snag replacement should be retained and adequately distributed in harvest units (Bull and Collins 1993). Leave all hollow snags and live trees intact [preferably >50 cm (20 in) dbh]. Large defective trees, especially those showing signs of decay such as top rot, broken tops, fungal conks, dead branch stubs, or other defects, should be retained (Cline et al. 1980, Neitro et al. 1985).

Avoid disturbing chimneys that are occupied by nesting or roosting Vaux's swifts during the breeding season or during migration (early May - September). Chimneys are becoming less accessible because insulated pipe are replacing many old brick design, and others are covered with screen spark-arresters (Bull and Collins 1993). The retention of traditional chimney designs are preferred by nesting and roosting swifts. However, safe design should also be accounted for during chimney construction and modification.

Insecticides can greatly reduce Vaux's swift's primary food source and are a risk to swift populations (Brown 1985). All insecticide use should be avoided in or near nests and roosts. Organochlorine, organophosphate, and carbamate insecticides can be highly toxic to birds

(McEwen et al. 1972, Grue et al. 1983, Grue et al. 1986, Smith 1987). Synthetic pyrethroid insecticides (e.g., permethrin) may be an alternative to these compounds outside of snag-rich habitat, because these chemicals are not persistent in the environment or toxic to birds at recommended concentrations. However, synthetic pyrethroids are highly toxic to aquatic

invertebrates and fish (Grue et al. 1983, Smith and Stratton 1986). Refer to Appendix A for contacts to assess pesticides, herbicides, and their alternatives.

Appropriate buffer widths for insecticide application near sensitive riparian and wetland areas range from 31-500 m (100-1,640 ft) (Kingsbury 1975, Payne et al. 1988, Terrell and Bytnar-Perfetti 1989). Buffer width calculations for insecticide application adjacent to snag-rich habitat should take into account the droplet size, volume of the compound and weather conditions that could influence wind drift (Kingsbury 1975, Brown 1978, Payne et al. 1988). Maintain a buffer of 500 m (1,640 ft) (Kingsbury 1975) from snag-rich areas when spraying insecticides (Brown 1978, Smith 1987).

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KEY POINTS

Habitat Requirements

- Vaux's swifts nest in hollow chambers created by decay within live or dead trees.
- Large hollow snags and live trees averaging 25 m (82 ft) tall, and 68 cm (27 in) dbh located in old-growth and mature forests are used for nesting. Many Vaux's swifts nest in hollow trees excavated by pileated woodpeckers.
- Overall stand characteristics (e.g., age, canopy layering, stem density) do not appear to be as important to Vaux's swifts as the availability of large, hollow snags and live trees.
- Vaux's swifts will nest/roost in unused brick chimneys with openings at least 23 cm x 23 cm (9 in x 9 in).

Management Recommendations

- Maintain existing old-growth as well as mature forest habitat. Manage stands on longer rotations (200 years).
- Retain all large, hollow large snags and large "defective" live trees, especially in younger, managed stands.
- Avoid disturbance of chimneys that are occupied by nesting and roosting Vaux's swifts during the breeding season (early May - September).
- Retain traditional chimney designs for use by nesting and roosting swifts. However, safe design should also be strongly considered for chimney construction and modification.
- Avoid using insecticides in areas inhabited by Vaux's swifts. Refer to Appendix A for contacts to assess pesticides, herbicides, and their alternatives.
- Substitute with synthetic pyrethroid insecticides (e.g., permethrin) or diflubenzuron (e.g., dimilin). Restrict the use of organophosphorous, organochlorine, and carbamate compounds to locations outside of snag-rich areas, away from swift nests and roosts.
- Maintain a 500 m (1,640 ft) buffer around snag-rich areas when spraying insecticide and apply during appropriate weather to avoid wind drift.